EXERCISE- 3 (A)

Question 1:
How much money will be required to buy 200, Rs. 25 shares at a premium of Rs. 2?

Solution 1:
Nominal value of 1 share = Rs. 25
Market value of 1 share = Rs. 25 + Rs. 2 = Rs. 27
No. of shares purchased = 200
Money required to buy 200 shares = Rs. 27 × 200
= Rs. 5,400 Ans.

Question 2:
How much money will be required to buy 125, Rs. 30 shares at a discount of Rs. 3?

Solution 2:
Nominal value of 1 share = Rs. 30
Market value of 1 share = Rs. 30 – Rs. 3 = Rs. 27
No. of shares purchased = 125
Money required to buy 125 shares = Rs. 27 × 125
= Rs. 3,375 Ans

Question 3:
A person buys 120 shares at a nominal value of Rs. 40 each, which he sells at Rs. 42.50 each. Find his profit and profit per cent.

Solution 3:
Nominal value of 120 shares = Rs. 40 × 120 = Rs. 4,800
Market value of 120 shares = Rs. 42.50 × 120 = Rs. 5,100
His profit = Rs. 5,100 – Rs. 4,800 = Rs. 300 Ans.
Profit = $\frac{300}{4{,}800} \times 100\% = 6.25\%$

Question 4:
Find the cost of 85 shares of Rs. 60 each when quoted at Rs. 63.25

Solution 4:
Market value of 1 share = Rs. 63.25
Market value of 85 shares = Rs. 63.25 × 85 = Rs. 5,376.25 Ans.

Question 5:

A man invests Rs. 800 in buying Rs. 5 shares and when they are selling at a premium of Rs. 1.15, he sells all the shares. Find his profit and profit per cent.

Solution 5:

Nominal value of 1 share = Rs. 5
Market value 1 share = Rs. 5 + Rs. 1.15 = Rs. 6.15
Total money invested = Rs. 800
∴ No of shares purchased = $\frac{800}{5} = 160$
Market value of 160 shares = 160 × 6.15 = Rs. 984
His profit = Rs. 984 – Rs. 800 = Rs. 184 Ans.
Profit = $\frac{184}{800} \times 100\% = 23\%$

Question 6:

Find the annual income derived from 250, Rs. 60 shares paying 5% dividend.

Solution 6:

Nominal value of 1 share = Rs. 60
Nominal value 250 shares = Rs. 60 × 250 = Rs. 15,000
Dividend = 5% of Rs. 15,000 = $\frac{5}{100} \times 15{,}000 = Rs. 750$

Question 7:

A man invests Rs. 3,072 in a company paying 5% per annum, when its Rs. 10 share can be bought for Rs. 16 each. Find:
(i) His annual income
(ii) his percentage income on his investment

Solution 7:

Market value of 1 share = Rs. 16
Nominal value of 1share = Rs. 10
Money invested = Rs. 3,072
∴ No of shares purchased = $\frac{3072}{16} = 192$
Nominal value of 192 shares = 10 × 192 = Rs. 1,920
Annual income = 5% of Rs. 1,920
= $\frac{5}{100} \times 1{,}920$
= Rs. 96
Income% = $\frac{96}{3{,}072} \times 100\% = 3.125\% = 3\frac{1}{8}\%$

Question 8:

A man invests Rs. 7,770 in a company paying 5 per cent dividend when a share of nominal value of Rs. 100 sells at a premium of Rs. 5 Find:
(i) the number of shares bought;
(ii) annual income
(iii) percentage income

Solution 8:

Total money invested = Rs. 7,770
Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 + Rs. 5 = Rs. 105
∴ No of shares purchased = $\frac{7770}{105} = 74$
Nominal value of 74 shares = 74 × 100 = Rs. 7,400
Annual income = 5% of Rs. 7,400
$= \frac{5}{100} \times 7{,}400$
= Rs. 370
Income% = $\frac{370}{7{,}770} \times 100\% = 4.76\%$

Question 9:

A man buys Rs. 50 shares of a company, paying 12 per cent dividend, at a premium of Rs. 10. Find:
(i) the market value of 320 shares.
(ii) his annual income;
(iii) his profit percent.

Solution 9:

Nominal value of 1 share = Rs. 50
Market value of 1 share = Rs. 50 + Rs. 10 = Rs. 60
Market value of 320 shares = 320 × 60 = Rs. 19,200
Nominal value of 320 shares = 320 × 50 = Rs. 16,000
Annual income = 12% of Rs. 16,000
$= \frac{12}{100} \times 16{,}000$
= Rs. 1,920
Profit % = $\frac{1{,}920}{19{,}200} \times 100\% = 10\%$

Question 10:

A man buys Rs. 75 shares at a discount of Rs. 15 of a company paying 20% dividend find:
(i) the market value of 120 shares;
(ii) his annual income;
(iii) his profit percent

Solution 10:

Nominal value of 1 share = Rs. 75
Market value of 1 share = Rs. 75 – Rs. 15 = Rs. 60
Market value of 120 shares = 120 × 60 = Rs. 7,200
Nominal value of 120 shares = 120 × 75 = Rs. 9,000
Annual income = 20% of Rs. 9,000

$$= \frac{20}{100} \times 9{,}000$$

= Rs. 1,800

Profit % = $\frac{1{,}800}{7{,}200} \times 100\% = 25\%$

Question 11:

A man has 300, Rs. 50 shares of a company paying 20% dividend. Find his net income after paying 3% income tax.

Solution 11:

Nominal value of 1 share = Rs. 50
Nominal value of 300 shares = 300 × 50 = Rs. 15,000
∴ Dividend = 20% of Rs. 15,000

$$= \frac{20}{100} \times 15{,}000 = Rs.\,3{,}000$$

∴ Income tax paid = 3% of Rs. 3,000

$$= \frac{3}{100} \times 3{,}000 = Rs.\,90$$

His net income = Rs. 3,000 – Rs. 90 = Rs. 2,910 Ans.

Question 12:

A company pays a dividend of 15% on its ten-rupee shares from which it deducts income tax at the rate of 22%. Find the annual income of a man who owns one thousand shares of this company.

Solution 12:

Nominal value of 1 share = Rs. 10
Nominal value of 1000 shares = 1000 × 10 = Rs. 10,000
∴ Dividend = 15 % of Rs. 10,000

$$= \frac{15}{100} \times 10{,}000 = Rs.\,1{,}500$$

∴ Income tax paid = 22 % of Rs. 1,500

$$= \frac{22}{100} \times 1{,}500 = Rs.\,330$$

His net income = Rs. 1,500 – Rs. 330 = Rs. 1,170 Ans.

Question 13:

A man invests Rs. 8,800 in buying shares of a company of face value of rupees hundred each at a premium of 10%. If he earns Rs. 1,200 at the end of the year as dividend, find:
(i) the number of shares he has in the company.
(ii) the dividend percent per shares.

Solution 13:

Total investment = Rs. 8,800
Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 110
∴ No of shares purchased = $\frac{8800}{110} = 80$
Nominal value of 80 shares = 80 × 100 = Rs. 8,000
Let dividend % = y %
Then y% of Rs. 8,000 = Rs. 1,200
$\Longrightarrow \frac{y}{100} \times 8{,}000 = Rs.1{,}200$
⟹ y = 15%

Question 14:

A man invests Rs. 1,680 in buying shares of nominal value Rs. 24 and selling at 12% premium. The dividend on the shares is 15% per annum. Calculate:
(i) the number of shares he buys;
(ii) the dividend he receives annually.

Solution 14:

Nominal value of 1 share = Rs. 24
Market value of 1 share= Rs24 + 12% of Rs. 24
= Rs. 24 + Rs. 2.88 = Rs. 26.88
Total investment = Rs1,680
∴ No of shares purchased = $\frac{1{,}680}{26.88} = 62.5$
Nominal value of 62.5 shares = 62.5 × 24 = Rs. 1,500
Dividend = 15% of Rs. 1,500
= Rs. 225

Question 15:

By investing Rs. 7,500 in a company paying 10 percent dividend, an annual income of Rs. 500 is received. What price is paid for each Rs. 100 shares?

Solution 15:

Total investment = Rs. 7,500
Nominal value of 1 share = Rs. 100
No. of shares purchased = y
Nominal value of y shares = 100 × y = Rs. (100y)
Dividend % = 10%

Dividend = Rs. 500
∴ 10% of 100y = Rs. 500
$\Longrightarrow \frac{10}{100} \times 100y = Rs.500$
$\Longrightarrow$ y = $\frac{500}{10}$ = 50 shares

∴ Market value of 1 share = $\frac{7,500}{50} = Rs.150\ Ans.$

EXERCISE: 3 (B)

Question 1:

A man buys 75, Rs. 100 shares of a company which pays 9 per cent dividend. He buys shares at such a price that he gets 12 per cent of his money. At what price did he buy the shares?

Solution 1:

Nominal value of 1share = Rs. 100
Nominal value of 75 shares = 100 × 75 = Rs. 7,500
Dividend % = 9 %
∴ Dividend = 9% of Rs. 7,500
$= \frac{9}{100} \times \text{Rs.}\,7,500 = \text{Rs.}\,675$
Let market price of 1 share = Rs. y
Then market price of 75 shares = Rs. 75y
Profit% on investment = 12 %
12% of 75 y = Rs. 657
$\Longrightarrow \frac{12}{100} \times 75\text{y} = \text{Rs.}\,657$
$\Longrightarrow$ y = Rs. 75

Question 2:

By purchasing Rs. 25 gas shares for Rs. 40 each, a man gets 4 per cent profit on his investment. What rate per cent is the company paying? What is his dividend if he buys 60 shares?

Solution 2:

Nominal value of 1 share = Rs. 25
Market value of 1 share = Rs. 40
Profit% on investment = 4%
Then profit on 1 share = 4% of Rs. 40 = Rs. 1.60
∴ Dividend % = $\frac{1.60}{25} \times 100\% = 6.4\%\ Ans.$
No. of shares purchased = 60
Then dividend on 60 shares = 60 × Rs.1.60 = Rs. 96 Ans.

Question 3:

Hundred rupee shares of a company are available in the market at a premium of Rs. 20. Find the rate of dividend given by the company, when a man's return on his investment is 15 per cent.

Solution 3:

Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 + Rs. 20 = Rs. 120
Profit% on investment of 1 share =15%
Then profit = 15% of Rs. 120 = Rs. 18
∴ Dividend % = $\frac{18}{100} \times 100\% = 18\%$ Ans.

Question 4:

.Rs. 50 shares of a company are quoted at a discount of 10%. Find the rate of dividend given by the company, the return on the investment on these shares being 20 per cent.

Solution 4:

Nominal value of 1 share = Rs. 50
Market value of 1 share = Rs. 50 − 10% of Rs. 50
= Rs. 50 – Rs. 5 = Rs. 45
Profit % on investment = 20%
Then profit on 1 share = 20% of Rs. 45 = Rs. 9
∴ Dividend % = $\frac{9}{50} \times 100\% = 18\%$ Ans.

Question 5:

.A company declares 8 per cent dividend to the share holders. If a man receives Rs. 2,840 as his dividend, find the nominal value of his shares.

Solution 5:

Dividend% = 8%
Dividend = Rs. 2,840
Let nominal value of shares = Rs. y
8% of y = Rs. 2,840
$\Rightarrow \frac{8}{100} \times y = \text{Rs. } 2{,}840$
⇒ y = Rs. 35,500

Question 6:

.How much should a man invest in Rs. 100 shares selling at Rs. 110 to obtain an annual income of Rs. 1,680, if the dividend declared is 12%?

Solution 6:

Nominal value of 1 share = Rs. 100

Market value of 1 share = Rs. 110
Let no. of shares purchased = n
Then nominal value of n shares = Rs. (100n)
Dividend% = 12%
Dividend = Rs. 1,680
∴ 12% of 100n = Rs. 1680
$\Longrightarrow \frac{12}{100} \times 100n = Rs.1{,}680$
$\Longrightarrow$ n = $\frac{1{,}680 \times 100}{12 \times 100}$ = 140
Then market value of 140 shares = 140 × 110 = 15,400 Ans

Question 7:

.A company declares a dividend of 11.2% to all its share-holders. If its Rs. 60 share is available in the market at a premium of 25%, how much should Rakesh invest, in buying the shares of his company, in order to have an annual income of Rs. 1,680?

Solution 7:

Nominal value of 1 share = Rs. 60
Market value of 1 share = Rs. 60 + 25% of Rs. 60
= Rs. 60 + Rs. 15 = Rs.75
Let no. of shares purchased = n
Then nominal value of n shares = Rs. (60n)
Dividend% = 11.2%
Dividend = Rs. 1,680
∴ 11.2% of 60n = Rs. 1,680
$\Longrightarrow \frac{11.2}{100} \times 60\text{n} = \text{Rs.}\,1{,}680$
$\Longrightarrow$ n = $\frac{1{,}680 \times 100}{11.2 \times 60} = 250$
Then market value of 250 shares = 250 × 75 = Rs. 18,750 Ans.

Question 8:

.A man buys 400, twenty-rupee shares at a premium of Rs. 4 each and receives a dividend of 12%. Find:
(i) The amount invested by him.
(ii) His total income from the shares.
(iii) Percentage return on his money.

Solution 8:

Nominal value of 1 share = Rs. 20
Market value of 1 share = Rs. 20 + Rs. 4 = Rs. 24
No. of shares purchased = 400
Nominal value of 400 shares = 400 × 20 = Rs. 8,000
(i) Market value of 400 shares= 400 × 24 = Rs. 9,600

(ii) Dividend% = 12%
Dividend = 12% of Rs. 8,000
$= \frac{12}{100} \times Rs.\,8{,}000 = Rs.\,960$
(iii) Percentage return = $\frac{\text{income}}{\text{investment}} \times 100\%$
$= \frac{960}{9{,}600} \times 100\% = 10\%$

Question 9:

.A man buys 400, twenty-rupee shares at a discount of 20% and receives a return of 12% on his money. Calculate:
(i) The amount invested by him.
(ii) The rate of dividend paid by the company.

Solution 9:

Nominal value of 1 share = Rs. 20
Market value of 1 share = Rs. 20 − 20% of Rs. 20
= Rs. 20 – Rs. 4 = Rs. 16
No. of shares purchased = 400
Nominal value of 400 shares = 400 × 20 = Rs. 8,000
(i) Market value of 400 shares= 400 × 16 = Rs. 6,400
(ii) Return% = 12%
Income = 12% of Rs. 6,400
$= \frac{12}{100} \times \text{Rs.}\,6{,}400 = \text{Rs.}\,768$
Dividend % = $\frac{\text{income}}{\text{Nominal value}} \times 100\%$
$= \frac{768}{8{,}000} \times 100\% = 9.6\%$

Question 10:

.A company, with 10,000 shares of Rs. 100 each, declares an annual dividend of 5%.
(i) What is the total amount of dividend paid by the company?
(ii) What should be the annual income of a man who has 72 shares in the company?
(iii) If he received only 4% of his investment, find the price he paid for each share.

Solution 10:

Nominal value of 1 share = Rs. 100
Nominal value of 10,000 shares = 10,000 × Rs. 100 = Rs. 10,00,000
(i) Dividend% = 5%
Dividend = 5% of Rs. 10,00,000
$= \frac{5}{100} \times Rs.\,10{,}00{,}000$ = Rs. 50,000

(ii) Nominal value of 72 shares = Rs. 100 × 72 = Rs. 7,200
Dividend = 5% of Rs. 7,200

$= \frac{5}{100} \times Rs.7{,}200$ = Rs. 360

(iii) Let market value of 1 share = Rs y
Then market value of 10,000 shares = Rs. (10,000y)
Return% = 4%
4% of Rs. (10,000y) = Rs. 50,000
$\Longrightarrow \frac{4}{100} \times 10{,}000y = Rs.50{,}000$
$\Longrightarrow$ y = Rs. 125.

Question 11:

.A lady holds 1800, Rs. 100 shares of a company that pays 15% dividend annually. Calculate her annual dividend. If she had brought thee shares at 40% premium, what is the return she gets as percent on her investment.
Give your answer to the nearest integer.

Solution 11:

Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 + 40% of Rs. 100
= Rs. 100 + Rs. 40 = Rs. 140
No. of shares purchased = 1800
Nominal value of 1800 shares = 1800 × 100 = Rs. 1,80,000
Market value of 1800 shares = 1800 × 140 = Rs. 2,52,000
(i) Dividend%= 15%
Dividend = 15% of Rs. 1,80,000
$= \frac{15}{100} \times Rs.1{,}80{,}000 = Rs.27{,}000\ Ans.$
(ii) $\therefore$ Return % $= \frac{\text{Income}}{\text{Investment}} \times 100\%$
$= \frac{27{,}000}{2{,}52{,}000} \times 100\% = 10.7\% = 11\%$ Ans

Question 12:

.A man invests Rs. 11,200 in a company paying 6 percent per annum when its Rs.100 shares can be brought for Rs.140. Find:
(i) His annual dividend.
(ii) His percentage return on his investment.

Solution 12:

Nominal value of 1 share = Rs.100
Market value of 1 share = Rs. 140
Total investment = Rs. 11,200
$\therefore$ No of shares purchased = $\frac{11{,}200}{140} = 80$ shares
Then nominal value of 80 shares = 80 × 100 = Rs. 8,000

(i) Dividend%= 6%
Dividend = 6% of Rs. 8,000
$= \frac{6}{100} \times Rs.\,8{,}000 = Rs.\,480$
(ii)
Return % = $\frac{Income}{Investment} \times 100\%$
$= \frac{480}{11{,}200} \times 100\%$
$= 4.29\%$

Question 13:

.Mr. Sharma has 60 shares of nominal value Rs. 100 and decides to sell them when they are at a premium of 60%. He invests the proceeds in shares of nominal value Rs. 50, quoted at 4% discount, and paying 18% dividend annually. Calculate:
(i) The sale proceeds;
(ii) The number of shares he buys and
(iii) His annual dividend from the shares.

Solution 13:

1st case
Nominal value of 1 share = Rs. 100
Nominal value of 60 shares = Rs. 100 × 60 = Rs. 6,000
Market value of 1 share = Rs. 100 + 60% of Rs. 100
= Rs. 100 + Rs. 60 = Rs. 160
Market value of 60 shares = Rs. 160 × 60 = Rs. 9,600 Ans.

(ii) Nominal value of 1 share = Rs. 50
Market value of 1 share = Rs. 50 − 4% of Rs. 50
= Rs. 50 – Rs.2 = Rs.48
∴ No of shares purchased = $\frac{9{,}600}{48} = 200\ shares\ Ans.$

(iii) Nominal value of 200 shares = Rs. 50 × 200 = Rs. 10,000
Dividend % = 18%
Dividend = 18% of Rs. 10,000
$= \frac{18}{100} \times Rs.\,10{,}000 = Rs.\,1{,}800\ Ans$

Question 14:

.A company with 10,000 shares of nominal value Rs.100 declares an annual dividend of 8% to the share-holders.
(i) Calculate the total amount of dividend paid by the company.
(ii) Ramesh had brought 90 shares of the company at Rs. 150 per share. Calculate the dividend he receives and the percentage of return on his investment.

Solution 14:

(i) Nominal value of 1 share = Rs. 100
Nominal value of 10,000 shares = Rs. 100 × 10,000 = Rs. 10,00,000
Dividend% = 8%
Dividend = 8% of Rs. 10,00,000
$= \frac{8}{100} \times Rs.10{,}00{,}000 = Rs.80{,}000$

(ii) Market value of 90 shares = Rs. 150 × 90 = Rs. 13,500
Nominal value of 90 shares = Rs. 100 × 90 = Rs. 9,000
Dividend = 8% of Rs. 9,000
$= \frac{8}{100} \times Rs.9{,}000 = Rs.720$

(iii) Return% $= \frac{\text{income}}{\text{investment}} \times 100\%$
$= \frac{720}{13{,}500} \times 100\%$
$= 5\frac{1}{3}\%$.

Question 15:

Which is the better investment:
16% Rs. 100 shares at 80 or 20% Rs.100 shares at 120?

Solution 15:

1st case

16% Rs.100 shares at 80 means;
Market value of 1 share = Rs. 80
Nominal value of 1 share = Rs. 100
Dividend = 16%
Income on Rs. 80 = 16% of Rs. 100 = Rs. 16
Income on Rs. 1 = $\frac{16}{80} = Rs.0.20$

2nd case

20% Rs. 100 shares at 120 means;
Market value of 1 share = Rs. 120
Nominal value of 1 share = Rs. 100
Dividend = 20%
Income on Rs. 120 = 20% of Rs. 100 = Rs. 20
Income on Rs. 1 = $\frac{20}{120} = Rs.0.17$
Then 16% Rs. 100 shares at 80 is better investment.

Question 16:

.A man has a choice to invest in hundred-rupee shares of two firms at Rs. 120 or at Rs. 132. The first firm pays a dividend of 5% per annum and the second firm pays a dividend of 6% per annum. Find:
(i) Which company is giving a better return.
(ii) If a man invests Rs. 26,400 with each firm, how much will be the difference between the annual returns from the two firms.

Solution 16:

(i)

1st firm:

Market value of 1 share = Rs. 120
Nominal value of 1 share = Rs. 100
Dividend = 5%
Income on Rs. 120 = 5% of Rs. 100 = Rs. 5
Income on Rs. 1 = $\frac{5}{120} = Rs.0.041$

2nd firm

Market value of 1 share = Rs. 132
Nominal value of 1 share= Rs. 100
Dividend = 6%
Income on Rs. 132 = 6% of Rs. 100 = Rs.6
Income on Rs. 1 = $\frac{6}{132} = Rs.0.045$
Then investment in second company is giving better return Ans.

(ii)
Income on investment of Rs. 26,400 in first firm
= $\frac{5}{120} \times 26{,}400$ = Rs. 1,100
Income on investment of Rs. 26,400 in second firm
= $\frac{6}{132} \times 26{,}400 = Rs.1{,}200$
∴ Difference between both returns = Rs. 1,200 – Rs. 1,100
= Rs. 100 Ans

Question 17:

.A man bought 360, ten-rupee shares of a company, paying 12 percent per annum. He sold the shares when their price rose to Rs. 21 per share and invested the proceeds in five-rupee shares paying 4.5 per cent per annum at Rs. 3.50 per share. Find the annual changes in his income.

Solution 17:

1st case
Nominal value of 1 share = Rs. 10
Nominal value of 360 shares = Rs. 10 × 360 = Rs. 3,600
Market value of 1 share = Rs. 21

Market value of 360 shares = Rs. 21 × 360 = Rs. 7,560
Dividend% = 12%
Dividend = 12% of Rs. 3,600
$= \frac{12}{100} \times 3{,}600 = Rs.432$

2nd case
Nominal value of 1 share = Rs. 5
Market value of 1 share = Rs. 3.50
∴ No, of shares purchased = $\frac{7{,}560}{3.50} = 2160\ shares$
Nominal value of 2160 shares = Rs. 5 × 2160 = Rs. 10,800
Dividend% = 4.5%
Dividend = 4.5% of Rs. 10,800
$= \frac{4.5}{100} \times 10{,}800 = Rs.486$
Annual change in income = Rs. 486 – Rs. 432
= Rs. 54 increase Ans.

Question 18:

A man sold 400 (Rs. 20) shares of a company, paying 5% at Rs. 18 and invested the proceeds in (Rs. 10) shares of another company paying 7% at Rs. 12. How many (Rs. 10) shares did he buy and what was the change in his income?

Solution 18:

1st case
Nominal value of 1 share = Rs.20
Nominal value of 400 shares = Rs. 20 × 400 = Rs. 8,000
Market value of 1 share = Rs. 18
Market value of 400 shares = Rs. 18 × 400 = Rs. 7,200
Dividend% = 5%
Dividend = 5% of Rs. 8,000
$= \frac{5}{100} \times 8{,}000 = Rs.400$

2nd case
Nominal value of 1 share = Rs. 10
Market value of 1 share = Rs. 12
∴ No of shares purchased = $\frac{7{,}200}{12} = 600\ shares$ Ans.
Nominal value of 600 shares = Rs. 10 × 600 = Rs. 6,000
Dividend% = 7%
Dividend = 7% of Rs. 6,000
$= \frac{7}{100} \times 6{,}000 = Rs.420$
Annual change in income = Rs. 420 – Rs. 400
= Rs. 20 increase Ans.

Question 19:

Two brothers A and B invest Rs. 16,000 each in buying shares of two companies. A buys 3% hundred-rupee shares at 80 and B buys ten-rupee shares at par. If they both receive equal dividend at the end of the year, find the rate percent of the dividend received by B.

Solution 19:

For A

Total investment = Rs. 16,000

Nominal value of 1 share = Rs. 100

Market value of 1 share = Rs. 80

∴ No of shares purchased = $\frac{16,000}{80} = 200\ shares$

Nominal value of 200 shares = Rs. 100 × 200 = Rs. 20,000

Dividend% = 3%

Dividend = 3% of Rs. 20,000

= $\frac{3}{100} \times Rs.\,20,000 = Rs.\,600$

For B

Total investment = Rs. 16,000

Nominal value of 1 share = Rs. 10

Market value of 1 share = Rs. 10

∴ No of shares purchased = $\frac{16,000}{10} = 1600\ shares$

Nominal value of 1600shares = 10 × 1600 = Rs. 16,000

Dividend received by B= Dividend received by A

= Rs. 600

Dividend % = $\frac{Divedend}{Nominal\ value} \times 100\%$

= $\frac{600}{16,000} \times 100\%$

= 3.75%

Question 20:

.A man invests Rs. 20,020 in buying shares of nominal value Rs. 26 at 10% premium. The dividend on the shares is 15% per annum.

Calculate:

(i) The number of shares he buys.

(ii) The dividend he receives annually.

(iii) The rate of interest he gets on his money.

Solution 20:

Total investment = Rs. 20,020

Nominal value of 1 share = Rs. 26

Market value of 1 share= Rs26 + 10% of Rs. 26

= Rs. 26 + Rs. 2.60 = Rs. 28.60

∴ No of shares purchased = $\frac{20,020}{28.60} = 700\ shares\ Ans.$

Nominal value of 700 shares = Rs. 26 × 700 = Rs. 18,200
Dividend % = 15%
Dividend = 15% of Rs. 18,200
= $\frac{15}{100} \times 18,200 = Rs.2,730\ Ans$
∴ Income% = $\frac{income}{Investment} \times 100\%$
= $\frac{2,730}{20,020} \times 100\% = \frac{150}{11}$ % = $13\frac{7}{11}$ % Ans.

Question 21:

Mrs. P. Chandra invested Rs. 19,200 in 15% Rs. 100 shares at 20% discount. After a year, she sold these shares at Rs. 90 each and invested the proceeds (including her dividend) in 20%, Rs. 50 shares at Rs. 42. Find:
(i) The dividend for the first year.
(ii) Her annual income in the second year.
(iii) The percentage change in her return on her original investment.

Solution 21:

1st case
Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 − 20% of Rs. 100
= Rs. 100 – Rs. 20 = Rs. 80
Total investment = Rs. 19,200
∴ No of shares purchased = $\frac{19,200}{80} = 240\ shares$
Nominal value of 240 shares = Rs. 100 × 240 = Rs. 24,000
Dividend% = 15%
Dividend = 15% of Rs. 24,000
= $\frac{15}{100} \times Rs.24,000 = Rs.3,600$
She sold 240 shares in = Rs. 90 × 240 = Rs. 21,600
2nd case
Total investment in 2nd year = Rs. 21,600 + Rs. 3,600
= Rs. 25,200
Nominal value of 1 share = Rs. 50
Market value of 1 share = Rs. 42
∴ No of shares purchased = $\frac{25,200}{42} = 600\ shares$
Nominal value of 600 shares = Rs. 50 × 600 = Rs. 30,000
Dividend% = 20%
Dividend = 20% of Rs. 30,000
= $\frac{20}{100} \times Rs.30,000 = Rs.6,000$
Annual change in income = Rs. 6,000 – Rs. 3,600

= Rs. 2,400
The percentage change in her return on her original investment
$= \frac{2,400}{19,200} \times 100\% = 12.5\%$

Question 22:

Govind invested Rs. 19,200 in 15% Rs 100 shares at 20% premium. After a year, he sold these shares at Rs. 140 each and invested the proceeds (including his dividend) in 20%, Rs. 20 shares at Rs. 16. Find:
(i) The dividend for the first year.
(ii) Her annual income in the second year.
(iii) The percentage change in his return on her original investment.

Solution 22:

1st case

Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 + 20% of Rs. 100
= Rs. 100 + Rs. 20 = Rs. 120
Total investment = Rs. 19,200
∴ No of shares purchased = $\frac{19,200}{120} = 160\ shares$
Nominal value of 160 shares= Rs100 x 160= Rs16,000
Dividend% = 15%
Dividend = 15% of Rs. 16,000
$= \frac{15}{100} \times 16,000$ = Rs. 2,400
He sold 160 shares in = Rs. 140 × 160 = Rs. 22,400

2nd case

Total investment in 2nd year = Rs. 22,400 + Rs. 2,400
= Rs. 24,800
Nominal value of 1 share = Rs. 20
Market value of 1 share = Rs. 16
∴ No of shares purchased = $\frac{24,800}{16} = 1550\ shares$
Nominal value of 1,550 shares = Rs. 20 × 1550 = Rs. 31,000
Dividend% = 20%
Dividend = 20% of Rs. 31,000
$= \frac{20}{100} \times 31,000 = Rs. 6,200$
Annual change in income = Rs. 6,200 – Rs. 2,400
= Rs. 3,800
The percentage change in his return on his original investment
$= \frac{3,800}{19,200} \times 100\% = \frac{475}{24}\ \% = 19\frac{19}{24}\ \%$

EXERCISE 3 (C)

Question 1:

.A man bought Rs. 40 shares at a premium of 40%. Find his income, if he invests Rs. 14,000 in these shares and receives a dividend at the rate of 8% on the face value of the shares.

Solution 1:

Total investment = Rs. 14,000
Nominal value of 1 share = Rs. 40
Market value of 1 share = Rs. 40 + 40% of Rs. 40
= Rs. 40 + Rs. 16 = Rs. 56
∴ No of shares purchased = $\frac{14,000}{56} = 250\ shares$
Nominal value of 250 shares = Rs. 40 × 250 = Rs. 10,000
Dividend% = 8%
Dividend = 8% of Rs. 10,000
= $\frac{8}{100} \times 10,000 = Rs. 800$

Question 2:

.A man bought Rs. 40 shares at a discount of 40%. Find his income, if he invests Rs. 12,000 in these shares and receives a dividend at the rate of 11% on the face value of the shares.

Solution 2:

Total investment = Rs.12,000
Nominal value of 1 share = Rs.40
Market value of 1 share = Rs. 40 − 40% of Rs. 40
= Rs. 40 – Rs. 16 = Rs. 24
∴ No of shares purchased = $\frac{12,000}{24} = 500\ shares$
Nominal value of 500 shares = Rs. 40 × 500 = Rs. 20,000
Dividend % = 11%
Dividend = 11% of Rs. 20,000
= $\frac{11}{100} \times 20,000 = Rs. 2,200$

Question 3:

A sum of rupees 11,880 is invested in Rs. 50 shares available at 12% discount. Find the income, if a dividend of 12% is given on the shares.

Solution 3:

Total investment = Rs. 11,880
Nominal value of 1 share = Rs. 50
Market value of 1 share = Rs. 50 − 12% of Rs. 50
= Rs. 50 – Rs. 6 = Rs. 44
∴ No of shares purchased = $\frac{11,880}{44} = 270\ shares$

Nominal value of 270 shares = Rs. 50 × 270 = Rs. 13,500
Dividend% = 12%
Dividend = 12% of Rs. 13,500
$= \frac{12}{100} \times 13{,}500 = Rs. 1{,}620$

Question 4:

Rajat buys Rs. 80 shares at 30% premium in a company paying 18% dividend. Find:
(i) The market value of 150 shares.
(ii) Rajat's annual income from these shares.
(iii) Rajat's percentage return from this investment.

Solution 4:

Nominal value of 1 share = Rs. 80
Market value of 1 share = Rs. 80 + 30% of Rs. 80
= Rs. 80 + Rs. 24 = Rs. 104
Market value of 150 shares = Rs. 104 × 150 = Rs. 15,600
Nominal value of 150 shares = Rs. 80 × 150 = Rs. 12,000
Dividend% = 18%
Dividend = 18% of Rs. 12,000
$= \frac{18}{100} \times 12{,}000 = Rs. 2{,}160$
$\text{Income\%} = \frac{\text{Income}}{\text{Investment}} \times 100\%$
$= \frac{2{,}160}{15{,}600} \times 100\%$
= 13.85%.

Question 5:

Peter invests Rs. 5,625 in a company paying 7% per annum when a share of Rs. 10 stands from Rs. 12.50. Find Peter's income from this investment.
If he sells 60% of these shares from Rs. 10 each, find his gain or loss in this transaction.

Solution 5:

(i)
Total investment = Rs. 5,625
Nominal value of 1 share = Rs. 10
Market value of 1 share = Rs. 12.50
∴ No of shares purchased = $\frac{5{,}625}{12.50} = 450\ shares$
Nominal value of 450 shares = Rs. 10 × 450 = Rs. 4,500
Dividend% = 7%
Dividend = 7% of Rs. 4,500
$= \frac{7}{100} \times 4{,}500 = Rs. 315$

(ii)
No. of shares sold = 60% of 450 = 270
Sale price of 270 shares = Rs10 × 270 = Rs. 2,700
Purchase price of 270 shares= Rs12.50 × 70 = Rs. 3,375
His loss = Rs. 3,375 – Rs. 2,700 = Rs. 675 Ans.

Question 6:

Mrs. Sharma buys 85 shares (par value Rs. 100) at Rs. 150 each.
(i) If the dividend is 6.5%, what will be her annual income?
(ii) If she wants to increase her income by Rs. 260; how much more should she invest?

Solution 6:

Par value of 85 shares = Rs. 100 × 85 = Rs. 8,500
Market value of 85 shares = Rs. 150 × 85 = Rs. 12,750
(i) Dividend% = 6.5%
Dividend = 6.5% of Rs. 8,500
$= \frac{6.5}{100} \times 8{,}500 = Rs.552.50\ Ans$

(ii) Required income = Rs. 552.50 + Rs. 260 = Rs. 812.50
If income is Rs. 552.50,then investment is Rs. 12,750
If income is Rs. 812.50, then investment is $= \frac{12{,}750}{552.50} \times 812.50$
= Rs. 18,750
More investment required = Rs. 18,750 – Rs. 12,750
= Rs. 6,000 Ans.

Question 7:

.A company gives x% dividend on its Rs. 60 shares, whereas the return on the investment in these shares is (x + 3) %. If the market value of each share is Rs. 50, find the value of x.

Solution 7:

Nominal value of 1 share = Rs. 60
Market value of 1 share = Rs. 50
Dividend% = x%
Return% = (x+3)%
According to question
x% of Rs. 60 = (x+3)% of Rs. 50
$\Rightarrow \frac{x}{100} \times Rs.60 = \frac{x+3}{100} \times Rs.50$
⇒ 60x = 50x + 150
⇒ 10x = 150
$\Rightarrow x = \frac{150}{10} = 15.$

Question 8:

.How much should a man invest in Rs. 100 shares selling at Rs. 85 to obtain an annual income of Rs. 1,800; if the dividend declared is 12%?
Also, find the percentage return on this investment.

Solution 8:

(i)
Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 85
Let no. of shares purchased = n
Nominal value of n shares = Rs. (100n)
∴ 12% of Rs(100n) = Rs. 1,800
$\Rightarrow \frac{12}{100} \times 100n$ = Rs. 1,800
$\Rightarrow$ n = $\frac{1,800 \times 100}{12 \times 100} = 150\ shares$
Market value of 150 shares = Rs. 85 × 150 = Rs. 12,750
(ii)
Income % = $\frac{Income}{Investment} \times 100\%$
$= \frac{1,800}{12,750} \times 100\%$
= 14.12%.

Question 9:

A dividend of 10% was declared on shares with a face value of Rs. 60. If the rate of return is 12%, calculate:
(i) The market value of the share.
(ii) The amount to be invested to get an annual income of Rs. 1,200.

Solution 9:

(i)
Dividend% = 10%
Face value = Rs. 60
Dividend = 10% of Rs. 60
$= \frac{10}{100} \times Rs.60 = Rs.6$
Let market value = Rs. y
Return% = 12%
12% of Rs (y) = Rs. 6
$\Rightarrow \frac{12}{100} \times y = Rs.6$
$\Rightarrow$ y = Rs. 50
(ii)
When income is Rs. 6, then investment is Rs. 50
When income is Rs. 1,200, then investment
$= \frac{50}{6} \times Rs.1,200$
= Rs. 10,000

Question 10:

.Mr. Gupta has a choice to invest in ten-rupee shares of two firm at Rs. 13 or at Rs. 16. If the first firm pays 5% dividend and the second firm pays 6% dividend per annum, find :
(i) Which firm is paying better.
(ii) If Mr. Gupta invests equally in both the firms and the difference between the returns from them is Rs. 30, find how much, in all, does he invest.

Solution 10:

(i)
1st firm
Nominal value of 1 share = Rs. 10
Market value of 1 share = Rs. 13
Dividend% = 5%
Dividend = 5% of Rs. 10 = Rs. 0.50
∴ Income% = $\frac{Income}{Investment} \times 100\%$

$= \frac{0.50}{13} \times 100\% = 3.846\%$

2nd firm
Nominal value of 1 share = Rs. 10
Market value of 1 share = Rs. 16
Dividend% = 6%
Dividend = 6% of Rs. 10 = Rs. 0.60
∴ Income% = $\frac{Income}{Investment} \times 100\%$
$= \frac{0.60}{16} \times 100\% = 3.75\%$
Then first firm is paying better than second firm.

(ii)
Let money invested in each firm= Rs y
For 1st firm
∴ No of shares purchased = $\frac{y}{13}\ shares$
Total dividend = Rs. 0.50 × $\frac{y}{13} = Rs.\frac{y}{26}$

For 2nd firm:
∴ No of shares purchased = $\frac{y}{16}\ shares$
Total dividend = Rs. 0.60 × $\frac{y}{16} = Rs.\frac{3y}{80}$
Given – difference of both dividend = Rs. 30
⇒ $\frac{y}{26} - \frac{3y}{80} = Rs.30$
⇒ $\frac{y}{1040}$ = Rs. 30
⇒ y = Rs. 30 × 1040 = Rs. 31,200
Total money invested in both firms = Rs. 31,200 × 2
= Rs. 62,400 Ans.

Question 11:

.A man invested Rs. 45,000 in 15% Rs. 100 shares quoted at Rs. 125. When the market value of these shares rose to Rs. 140, he sold some shares, just enough to raise Rs. 8,400.
Calculate:
(i) The number of shares he still holds;
(ii) The dividend due to him on these remaining shares.

Solution 11:

(i)
Total investment = Rs. 45,000
Market value of 1 share = Rs. 125
∴ No of shares purchased = $\frac{45000}{125} = 360\ shares$
Nominal value of 360 shares = Rs. 100 × 360 = Rs. 36,000
Let no. of shares sold = n
Then sale price of 1 share = Rs. 140
Total sale price of n shares = Rs. 8,400
Then n = $\frac{8,400}{140} = 60\ shares$
The no. of shares he still holds = 360 – 60 = 300

(ii)
Nominal value of 300 shares = Rs. 100 × 300 = Rs. 30,000
Dividend% = 15%
Dividend = 15% of Rs. 30,000
= $\frac{15}{100} \times \text{Rs. } 30,000 = \text{Rs. } 4,500$

Question 12:

.Mr. Tiwari invested Rs. 29,040 in 15% Rs. 100 shares quoted at a premium of 20%. Calculate:
(i) The number of shares bought by Mr. Tiwari.
(ii) Mr. Tiwari's income from the investment.
(iii) The percentage return on his investment.

Solution 12:

Total investment = Rs. 29,040
Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 + 20% of Rs. 100
= Rs. 100 + Rs. 20 = Rs. 120
∴ No of shares purchased = $\frac{29,040}{120} = 242\ shares$
Nominal value of 242 shares = Rs. 100 × 242 = Rs. 24,200
Dividend% = 15%
Dividend = 15% of Rs. 24,200
= $\frac{15}{100} \times \text{Rs. } 24,200 = \text{Rs. } 3,630$

Income % = $\frac{\text{income}}{\text{Investment}} \times 100\%$

= $\frac{3,630}{29,040} \times 100\%$

= 12.5%

Question 13:

A dividend of 12% was declared on Rs. 150 shares selling at a certain price. If the rate of return is 10%, calculate:

(i) The market value of the shares.

(ii) The amount to be invested to obtain an annual dividend of Rs. 1,350.

Solution 13:

(i) Nominal value of 1 share = Rs. 150

Dividend% = 12%

Dividend on 1 share = 12% of Rs. 150

= $\frac{12}{100} \times Rs.150 = Rs.18$

Let market value of 1 share = Rs y

Return% = 10%

10% of Rs (y) = Rs. 18

$\Rightarrow \frac{10}{100} \times y$ = Rs. 18

$\Rightarrow$ y = Rs. 180

(ii) When dividend is Rs. 18, then investment is Rs. 180

When dividend is Rs. 1,350, then investment

= $\frac{180}{18} \times Rs.1,350$

= Rs. 13,500

Question 14:

.Divide Rs. 50,760 into two parts such that if one part is invested in 8% Rs. 100 shares at 8% discount and the other in 9% Rs. 100 shares at 8% premium, the incomes from both the investments are equal.

Solution 14:

Total investment = Rs. 50,760

Let 1st part = Rs. y

2nd part = Rs. (50,760 − y)

For 1st part

Nominal value of 1 share = Rs. 100

Market value of 1 share = Rs. 100 − 8% of Rs. 100

= Rs. 100 – Rs. 8 = Rs. 92

∴ No of shares purchased = $\frac{y}{92}$ $shares$

Dividend% = 8%
Dividend on 1 share = 8% of Rs. 100 = Rs. 8
Total dividend = $\frac{y}{92} \times Rs.8 = Rs.\frac{2y}{23}$

For 2nd part
Nominal value of 1 share = Rs. 100
Market value of 1 share = Rs. 100 + 8% of Rs. 100
= Rs. 100 + Rs 8 = Rs. 108
∴ No of shares purchased = $\frac{50760 - y}{108}$ $shares$
Dividend% = 9%
Dividend on 1 share = 9% of Rs. 100 = Rs. 9
Total dividend = $\frac{50760 - y}{108} \times Rs.9$ = Rs. $\frac{9(50760 - y)}{108}$
Given that both dividend are equal
Then Rs. $\frac{2y}{23} = Rs.\frac{9(50760 - y)}{108}$
⇒ 2y × 108 = 23 (456840 – 9y)
⇒ 216y = 456840 × 23 – 207y
⇒ 423y = 456840 × 23
⇒ y = $\frac{456840 \times 23}{423} = Rs.24{,}840$
1st part = Rs. 24,840
2nd part = Rs. 50760 – Rs. 24,840 = Rs. 25,920 Ans.

Question 15:

Mr. Shameem invested 33 $\frac{1}{3}$% of his savings in 20% Rs. 50 shares quoted at Rs. 60 and the remainder of the savings in 10% Rs. 100 shares quoted at Rs. 110. If his total income from these investments is Rs. 9,200; Find:
(i) His total savings
(ii) The number of Rs. 50 shares.
(iii) The number of Rs. 100 shares.

Solution 15:

Let his total savings is Rs y
1st case
His saving = 33 $\frac{1}{3}$% $of\ y = Rs.\frac{y}{3}$
Market price of 1 share = Rs. 60
Then shares purchased = $\frac{y}{3 \times 60} = \frac{y}{180}$
Dividend on 1share = 20% of Rs. 50 = Rs. 10
Total dividend = $\frac{y}{180} \times 10 = Rs.\frac{y}{18}$

2nd case
His saving = 66$\frac{2}{3}$% of y = Rs. $\frac{2y}{3}$

Market price of 1share= Rs110
Then shares purchased = $\frac{2y}{3\times110} = \frac{y}{165}$
Dividend on 1share = 10% of Rs. 100 = Rs. 10
Total dividend = $\frac{y}{165} \times 10$ = Rs. $\frac{2y}{33}$
According to question
Total income = Rs. 9,200
$\Rightarrow \frac{y}{18} + \frac{2y}{33} = Rs.9{,}200$
$\Rightarrow \frac{23y}{198} = Rs.9{,}200$
$\Rightarrow$ y = $\frac{9{,}200\times198}{23}$ = Rs. 79,200 Ans
The number of Rs. 50 share = $\frac{79{,}200}{180} = 440$ Ans.
The number of Rs. 100 share = $\frac{79{,}200}{165} = 480\ Ans.$

Question 16:

Vivek invests Rs. 4,500 in 8%, Rs.10 shares at Rs. 15. He sells the shares when the price rises to Rs. 30, and invests the proceeds in 12% Rs. 100 shares at Rs. 125. Calculate:
(i) The sale proceeds
(ii) The number of Rs. 125 shares he buys.
(iii) The changes in his annual income from dividend.

Solution 16:

1st case

(i) Total investment = Rs. 4,500
Market value of 1 share = Rs. 15
∴ No of shares purchased = $\frac{4500}{15} = 300\ shares$
Nominal value of 1 share = Rs. 10
Nominal value of 300 shares = Rs. 10 × 300 = Rs. 3000
Dividend = 8% of Rs. 3,000
= $\frac{8}{100} \times Rs.3{,}000 = Rs.240$
Sale price of 1 share = Rs. 30
Total sale price = Rs. 30 × 300 = Rs. 9,000 Ans.

(ii) new market price of 1 share = Rs. 125
∴ No of shares purchased = $\frac{9000}{125} = 72\ shares\ Ans.$

(iii) New nominal value of 1 share = Rs. 100
New nominal value of 72 shares = Rs. 100 × 72 = Rs. 7,200
Dividend% = 12%
New dividend = 12% of Rs. 7,200
= $\frac{12}{100} \times Rs.7{,}200 = Rs.864$
Change in annual income = Rs. 864 – Rs. 240
= Rs. 624 Ans

Question 17:

.Mr. Parekh invested Rs. 52,000 on Rs. 100 shares at a discount of Rs. 20 paying 8% dividend. At the end of one year he sells the shares at a premium of Rs. 20. Find:
(i) The annual dividend.
(ii) The profit earned including his dividend

Solution 17:

Rate of dividend = 8%
Investment = Rs. 52000
Market Rate = Rs. 100 − 20 = Rs. 80
No. of shares purchased = $\frac{52000}{80} = 650$
(i) Annual dividend = 650 × 8 = Rs. 5200 Ans.
(ii) On selling, market rate = Rs. 100 + 20 = Rs. 120
⇒ sale price = 650 × 120 = Rs. 78,000
Profit = Rs. 78,000 – Rs. 52,000 = Rs. 26,000
⇒ Total gain = 26000 + 5200 = Rs. 31200 Ans.